Neel-Schaffer, Inc.
125 S. Congress St, Suite 1100
Jackson, MS 39201
601.948.3071
www.neel-schaffer.com

May 4, 2020

Mr. Paul Ingram, P.A.
1280 Warrenton Rd
Vicksburg, MS 39180

Re: Traffic Analysis for the Proposed Daycare in Gluckstadt, MS

Dear Mr. Ingram:

Per your request, Neel-Schaffer has conducted an analysis of the proposed Daycare on the new roadway – Gluckstadt Way in Gluckstadt, MS. A previous letter was prepared that provided traffic analysis information regarding the connection of the new roadway between Church Road and Calhoun Station Parkway within the ±55 acre parcel in the southwest quadrant of the intersection of Church Road with Calhoun Station Parkway. The proposed Daycare is the second development on the new roadway (Calloway's has access to both Gluckstadt Way and Calhoun Station Parkway. Construction of the new roadway is underway; however the new roadway is not open to traffic at this time.

Existing Conditions

A field inventory of the project site was conducted to document the existing conditions of the site and traffic control within the project limits. The posted speed limit on Calhoun Station Parkway is 35 mph adjacent to the site. Calhoun Station Parkway was extended south of Church Road in 2011, to connect with Gluckstadt Road. The extension of Calhoun Station Parkway south to Gluckstadt Road provided a contiguous route on the west side of I-55 between the Sowell Road interchange and Gluckstadt Road interchange. Traffic is primarily attracted to the area because of the access to the Germantown High School and Middle School to the north, and as a bypass route of the congested Gluckstadt Road to the south. Recent (March 2020) improvements to Gluckstadt Road have provided two eastbound travel lanes between Bozeman/Catlett Road and I-55. This improved eastbound capacity is likely to divert some traffic from Stribling Road Extension/Church Road, back to Gluckstadt Road.

Calhoun Station Parkway is a four-lane divided roadway from Sowell Road south to approximately 650 ft south of Church Road, where the roadway transitions to a two-lane roadway with a center two-way left turn lane.

Looking north on 3-Lane Calhoun Station Parkway from Gluckstadt Way near Calloway's

Stribling Road Extension extends east of Catlett Road and changes names to Church Road at the intersection with Germantown subdivision and the north/south portion of Church Road. This two-lane east/west roadway widens to a three lane road approximately 300 ft east of Germantown Road. The posted speed limit is 35 mph north of the project site on Church Road.

Looking east on Church Road at new Gluckstadt Way intersection.

Recent intersection traffic control changes have been made at the adjacent intersections of Church Road/Calhoun Station Parkway and Church Road/Germantown Road. The intersection at Calhoun Station Parkway was converted from an all-way stop control to a signalized intersection. Channelized right turn lanes on each approach allow for right turning traffic to bypass the signal control. The intersection of Germantown Road/Church Road was modified to remove the unwarranted all-way stop condition, which alleviated much of the eastbound morning congestion that occurred during the AM Peak hour at the all-way stop at Germantown Road. The intersection traffic control at Church Road/Germantown Road is now a two-way stop for north/south traffic with east/west traffic free-flow.

Calhoun Station Parkway is a north/south Major Collector roadway that provides access to Germantown High School and Middle School, just north of Church Road. AT&T and Tent and Party Rental each have a parcel west of Calhoun Station Parkway, with access via Church Road. Storage Max is under construction on the parcel west of Tent and Party Rental.

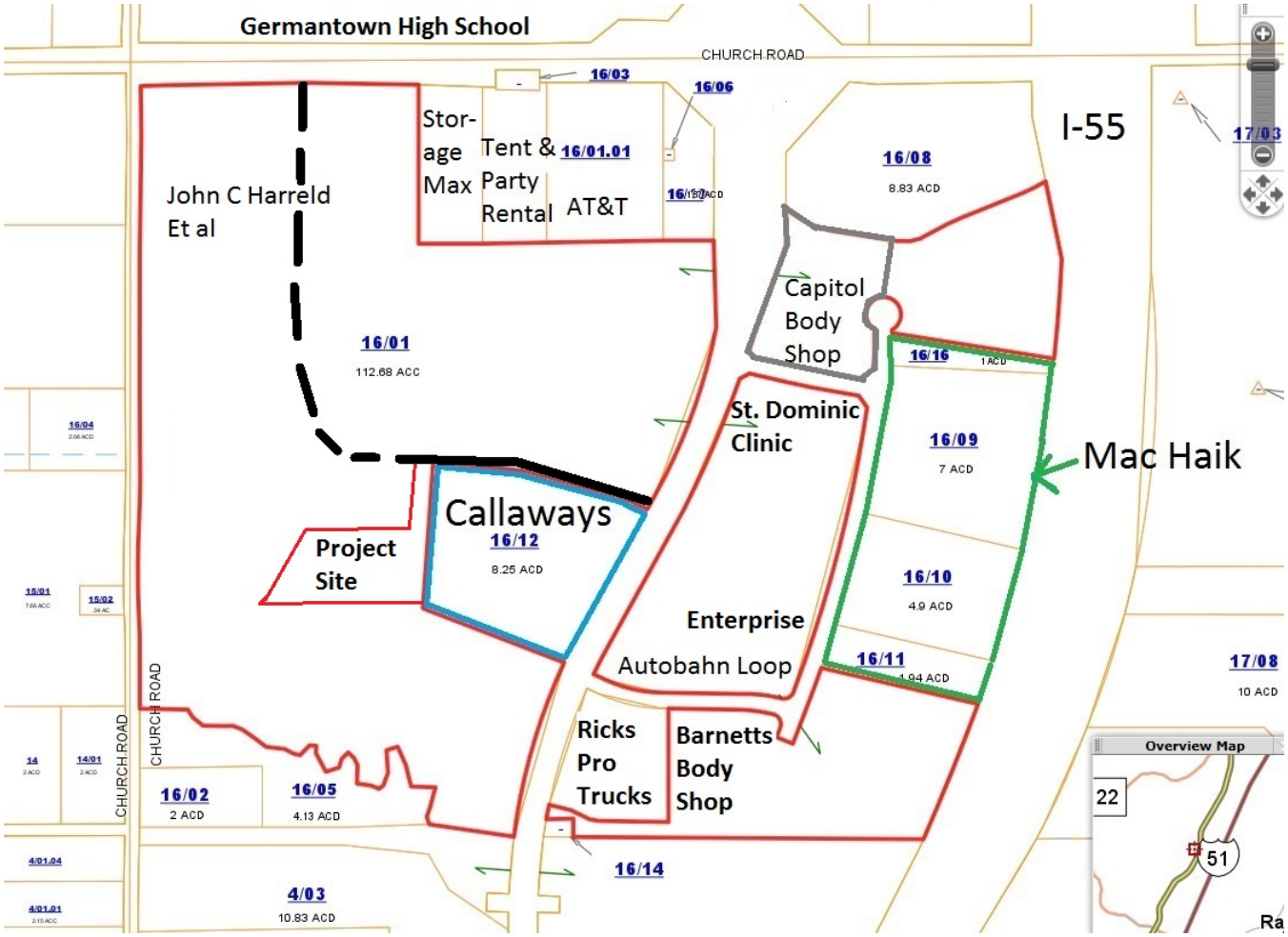
Storage Max site construction on Church Road

Mac Haik has a new dealership on the east side of Calhoun Station Parkway, along with Capitol Body Shop. New developments on the east side of Calhoun Station Parkway along Autobahn Loop include St. Dominic Clinics, Barnett's Body Shop, Enterprise Rent-a-Car and Rick's Pro Truck. Callaway's Yard and Garden Center is located on the west side of Calhoun Station Parkway.

The access road is constructed but not open through this undeveloped 55-acre parcel. A portion of the road (approximately 750 LF) was initially constructed adjacent to the Callaway's site. The additional 1,800 ft of roadway was recently constructed to connect this roadway to the northwest with Church Road. The alignment of the roadway is provided in **Figure 1-Vicinity Map**, located approximately 300 ft west of the Germantown Road gated driveway on Church Road. Figures are provided as attachments to this letter/report.

Looking south on Gluckstadt Way from Church Road

The Madison County Tax Assessor's map was used to identify the existing businesses and parcels surrounding the project site. The solid black dashed line represents the extension of Gluckstadt Way west/north of Callaways, which provides direct access to the project site. This dashed section is currently under construction.



Madison County Tax Map Source: TSC Maps, Neel-Schaffer, 2020.

The project site is located just west of Callaway's Yard and Garden Center on Gluckstadt Way. The site plan is shown graphically in **Figure 2**.

Current traffic volumes are below average because of the COVID-19 quarantine and schools are not in session. Historical traffic volumes were used from October 2018. The existing (October 2018) peak hour traffic volumes adjacent to the site are shown in **Figure 3**.

Trip Generation/Assignment

The trip generation characteristics of the proposed Day Care Center development were calculated using the Institute of Transportation Engineers (ITE), Trip Generation, 9th Edition. The facility is proposed to have 10-12 employees, 86 kindergarten aged children, and 100 after school children (6-11 years old). The results of the trip generation calculations are shown in **Table 1**.

Table 1
Trip Generation

Land Use	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Day Care Center	12,200 SF	904	149	79	70	151	71	80
Daily Traffic Generation Day Care Center [ITE 565] = T = 74.06 * X AM Peak Hour Traffic Generation Day Care Center [ITE 565] = T = 12.18 * X (53%in/47%out) PM Peak Hour Traffic Generation Day Care Center [ITE 565] = T = 12.34 * X (47%in/53%out)								

Source: ITE Trip Generation, 9th Edition, Neel-Schaffer, 2020. X = 1,000 SF GFA

The calculated trips for the Day Care Center were assigned to the adjacent roadway network based on the demographic distribution of surrounding area. The site generated traffic volumes are shown in **Figure 4**.

Historical Traffic Volumes

Traffic volumes from prior years were compared to identify the trends in annual growth on Church Road, as Gluckstadt Road has been experiencing congestion/delays associated with the rapid area development and popularity of this area. The details of traffic counts along Church Road are summarized in **Table 2**.

Table 2 – East/West Traffic Volumes on Church Road

Intersection & Year	AM Peak			Mid-Day Peak			PM Peak		
	EB	WB	Total	EB	WB	Total	EB	WB	Total
CSP/Church Rd									
2018	879	374	1,253	177	184	361	332	378	710
2017	709	364	1,073	167	178	345	321	355	676
Germantown Rd/Church									
2016	808	187	995	112	130	242	219	475	694

Source: Neel-Schaffer, 2020.

Historical traffic volumes reflect a 26% increase in traffic on Church Road in a two-year period in the AM Peak. However, with the opening of the second eastbound travel lane on Gluckstadt Road, the diversion of traffic back to Gluckstadt Road is anticipated to alleviate some of the congestion on Church Road/Stribling Road Extension.

Traffic Impacts

Traffic volumes were projected to the horizon year (2021) from 2018 and site traffic was added to the background traffic volumes. The intersection delays were evaluated using the information provided in the *Highway Capacity Manual* to evaluate the levels-of-service (LOS) for the study intersections. The LOS analysis included the existing and future traffic (2021 Total traffic at buildout). The intersections identified in this analysis include the adjacent signalized intersection of Church Road/Calhoun Station Parkway, and the unsignalized intersections at Church Road/Gluckstadt Way and Calhoun Station Parkway/Gluckstadt Way. The capacity analysis sheets are provided as an attachment to this letter/report. The capacity analysis results are summarized in **Table 3**.

Table 3
Capacity Analysis Summary

Intersection	Time Period	Approach LOS				Intersection LOS
		EB	WB	NB	SB	
2018 Existing Signalized						
Calhoun Stn Pky/	AM Peak	C	C	B	B	C
Church Road	PM Peak	C	C	A	A	B
2021 Total Traffic Signalized						
Calhoun Stn Pky/	AM Peak	C	C	B	B	C
Church Road	PM Peak	C	C	A	B	B

Unsignalized Intersections	Time Period	Critical Movement Level of Service											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
2021 Total Traffic													
Calhoun Stn Pky/	AM Peak	B	-	B	-	-	-	A	-	-	-	-	-
Gluckstadt Way	PM Peak	B	-	B	-	-	-	A	-	-	-	-	-
Church Road/	AM Peak	-	-	-	-	-	-	-	-	C	-	-	-
Gluckstadt Way	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-

Source: Neel-Schaffer, 2020, HCM 2010.

The capacity analysis identifies that the adjacent study intersections are forecast to operate at acceptable levels of service with the development of the project site as a Day Care Center, based on the trip generation calculations, the 2018 base year traffic count, and the horizon year traffic forecasts.

Recommendations

The trip generation characteristics of the proposed Day Care Center site are relatively low traffic volumes and are calculated to have a minimal impact on the adjacent street traffic. Study intersections are shown to operate at acceptable levels with and without the development of Day Care Center site. The auxiliary lane construction (new right turn lanes) for Gluckstadt Way on both Church Road and Calhoun Station Parkway will help to minimize the disruption to thru traffic as vehicles access the site from the adjacent roadways.

If you have any questions or comments regarding this analysis, please call me at (601) 948-3071.

Sincerely,

NEEL-SCHAFFER, INC.

Jonathan A. Kiser, P.E., PTOE, PTP
Professional Traffic Engineer &
Transportation Planner

Figure 1 – Vicinity Map
Figure 2 – Gluckstadt Day Care - Site Plan
Figure 3 – 2018 Existing Traffic
Figure 4 – Site Traffic
Figure 5 – Year 2021 Total Traffic

Attachments:	Intersection Volume Calculation Tables	(A1-A4)
	Traffic count – Calhoun Station Parkway/Church Road	(A5-A10)
	Highway Capacity Analysis Sheets	(A11-A18)

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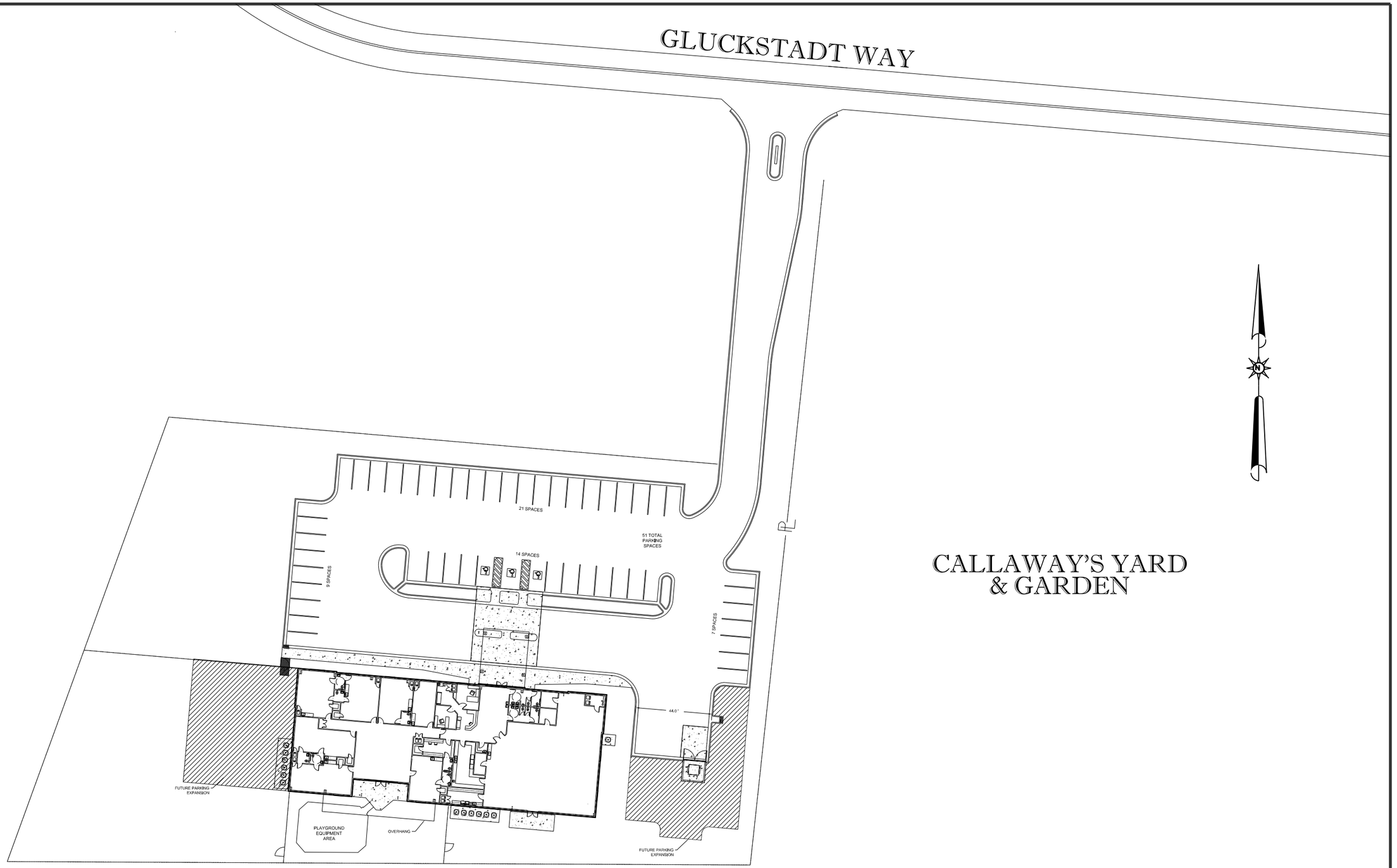
VICINITY MAP

FIGURE 1



CALLAWAY'S YARD
& GARDEN

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GLUCKSTADT DAYCARE SITE PLAN

FIGURE
2

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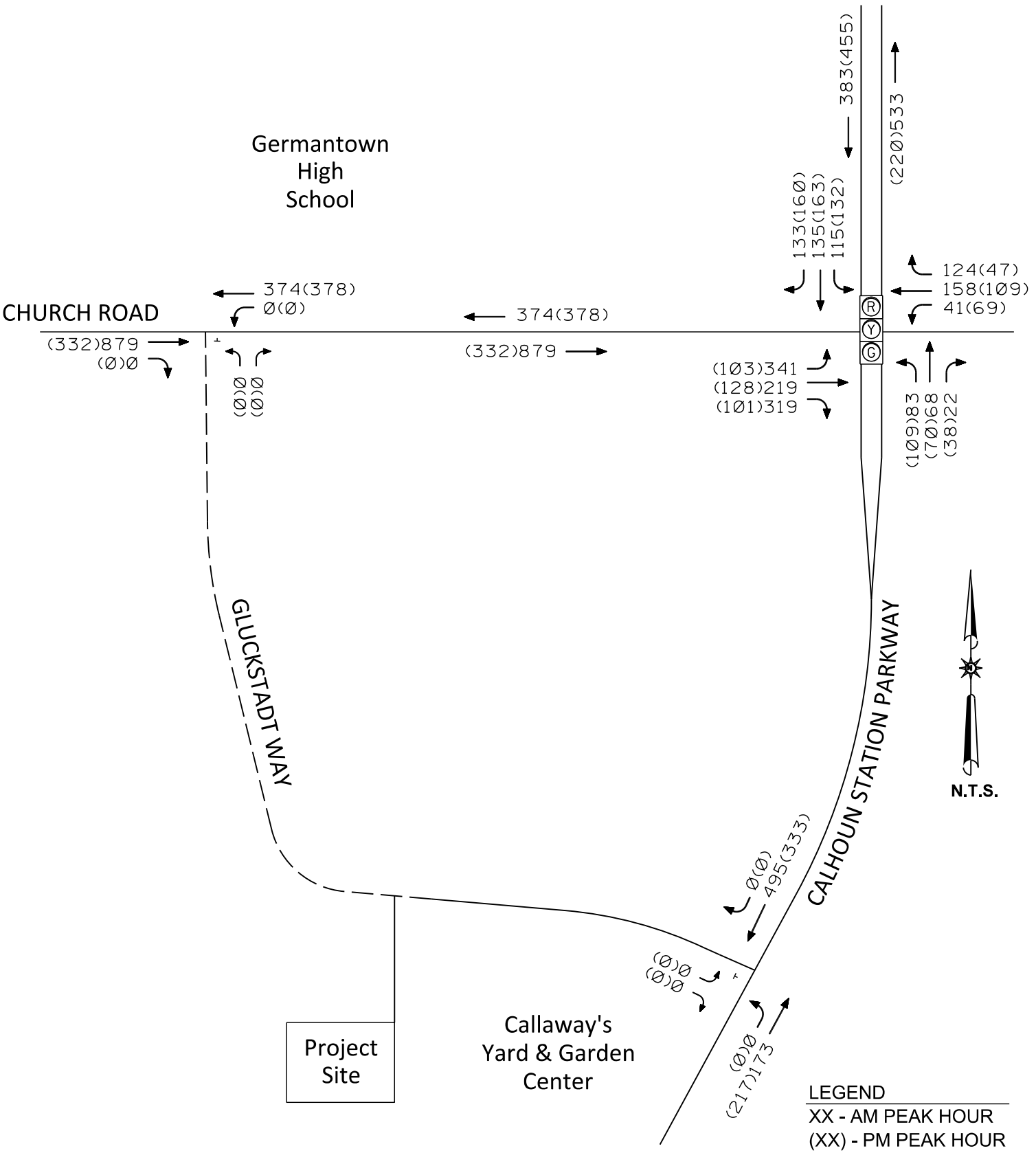

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2018 EXISTING TRAFFIC

FIGURE
3

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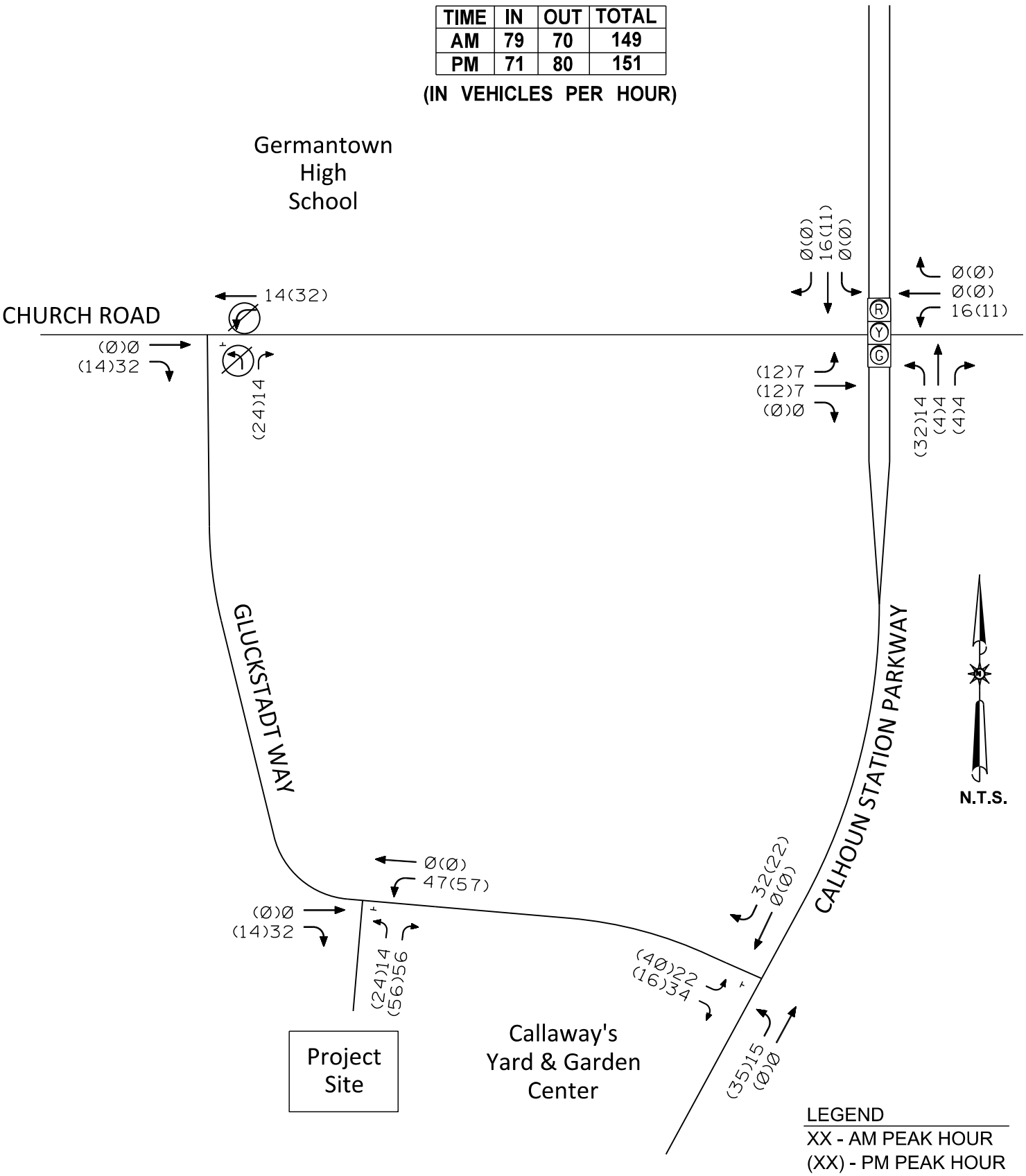
TRIP GENERATION

TIME	IN	OUT	TOTAL
AM	79	70	149
PM	71	80	151

(IN VEHICLES PER HOUR)



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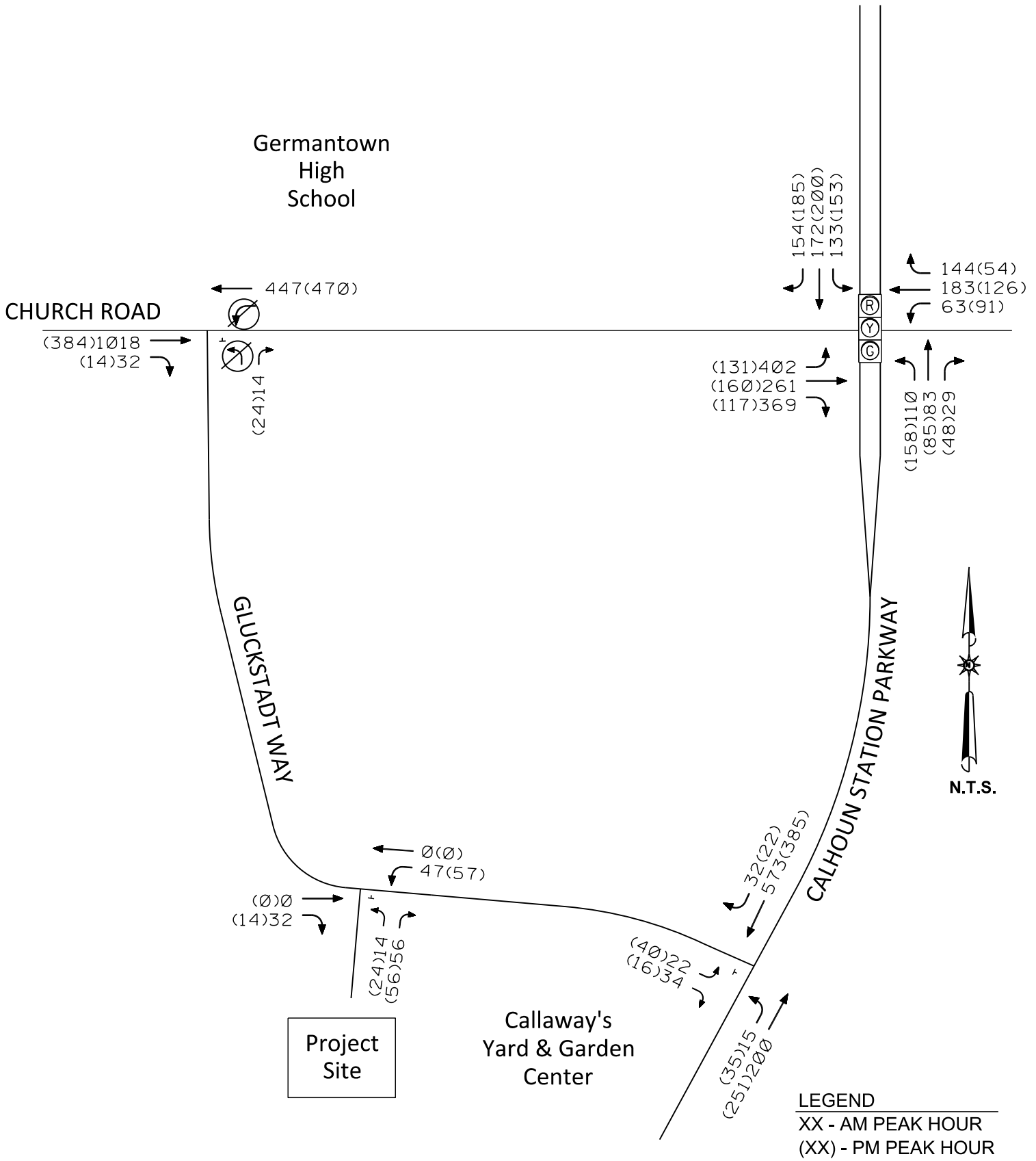
SITE TRAFFIC

FIGURE
4



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YEAR 2021 TOTAL TRAFFIC

FIGURE
5

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Calhoun Station Parkway-Gluckstadt Way

Seasonal Adjustment Factor	1
Annual Growth Factor	5.0%
Base Year	2018
Horizon Year 1	2021

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2018 Existing Traffic	0	173	0	0	495	0	0	0	0	0	0	0	668
2021 Non-Site Traffic	0	200	0	0	573	0	0	0	0	0	0	0	773
Site Traffic-Day Care Center	15	0	0	0	0	32	22	0	34	0	0	0	103
2021 Total Traffic	15	200	0	0	573	32	22	0	34	0	0	0	876
PM Peak Hour													
2018 Existing Traffic	0	217	0	0	333	0	0	0	0	0	0	0	550
2021 Non-Site Traffic	0	251	0	0	385	0	0	0	0	0	0	0	636
Site Traffic-Day Care Center	35	0	0	0	0	22	40	0	16	0	0	0	113
2021 Total Traffic	35	251	0	0	385	22	40	0	16	0	0	0	749

Source: Neel-Schaffer, 2020.

Church Road/Gluckstadt Way

Seasonal Adjustment Factor	1
Annual Growth Factor	5.0%
Base Year	2018
Horizon Year 1	2021

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2018 Existing Traffic	0	0	0	0	0	0	0	879	0	0	374	0	1,253
2021 Non-Site Traffic	0	0	0	0	0	0	0	1018	0	0	433	0	1,451
Site Traffic-Day Care Center	0	0	14	0	0	0	0	0	32	0	14	0	60
2021 Total Traffic	0	0	14	0	0	0	0	1,018	32	0	447	0	1,511
PM Peak Hour													
2018 Existing Traffic	0	0	0	0	0	0	0	332	0	0	378	0	710
2021 Non-Site Traffic	0	0	0	0	0	0	0	384	0	0	438	0	822
Site Traffic-Day Care Center	0	0	24	0	0	0	0	0	14	0	32	0	70
2021 Total Traffic	0	0	24	0	0	0	0	384	14	0	470	0	892

Source: Neel-Schaffer, 2020.

Site Drive/Gluckstadt Way

Seasonal Adjustment Factor	1
Annual Growth Factor	5.0%
Base Year	2018
Horizon Year 1	2021

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2018 Existing Traffic	0	0	0	0	0	0	0	0	0	0	0	0	0
2021 Non-Site Traffic	0	0	0	0	0	0	0	0	0	0	0	0	0
Site Traffic-Day Care Center	14	0	56	0	0	0	0	0	32	47	0	0	149
2021 Total Traffic	14	0	56	0	0	0	0	0	32	47	0	0	149
PM Peak Hour													
2018 Existing Traffic	0	0	0	0	0	0	0	0	0	0	0	0	0
2021 Non-Site Traffic	0	0	0	0	0	0	0	0	0	0	0	0	0
Site Traffic-Day Care Center	24	0	56	0	0	0	0	0	14	57	0	0	151
2021 Total Traffic	24	0	56	0	0	0	0	0	14	57	0	0	151

Source: Neel-Schaffer, 2020.

Church Road/Calhoun Station Parkway

Seasonal Adjustment Factor	1
Annual Growth Factor	5.0%
Base Year	2018
Horizon Year 1	2021

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour													
2018 Existing Traffic	83	68	22	115	135	133	341	219	319	41	158	124	1,758
2021 Non-Site Traffic	96	79	25	133	156	154	395	254	369	47	183	144	2,035
Site Traffic-Day Care Center	14	4	4	0	16	0	7	7	0	16	0	0	68
2021 Total Traffic	110	83	29	133	172	154	402	261	369	63	183	144	2,103
PM Peak Hour													
2018 Existing Traffic	109	70	38	132	163	160	103	128	101	69	109	47	1,229
2021 Non-Site Traffic	126	81	44	153	189	185	119	148	117	80	126	54	1,422
Site Traffic-Day Care Center	32	4	4	0	11	0	12	12	0	11	0	0	86
2021 Total Traffic	158	85	48	153	200	185	131	160	117	91	126	54	1,508

Source: Neel-Schaffer, 2020.

Neel-Schaffer
P.O. Box 22625
Jackson, MS 39225

Intersection: Church Rd/Calhoun Stn Pkwy
Counter: T. Kiser (Video)
County/State: Madison/MS
Weather: Cloudy/Dry

File Name : Church-CSP
Site Code : 00000000
Start Date : 10/10/2018
Page No : 1

Groups Printed- Autos - SU Trucks Buses - Semi Trucks

	CALHOUN STN PKWY Southbound					CHURCH RD Westbound					CALHOUN STN PKWY Northbound					CHURCH RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	3	0	4	0	7	8	7	2	0	17	4	1	10	0	15	4	21	23	0	48	87
06:15 AM	3	2	1	0	6	9	6	1	0	16	7	1	14	0	22	14	36	33	0	83	127
06:30 AM	12	1	5	0	18	11	7	3	0	21	7	2	19	0	28	25	36	45	0	106	173
06:45 AM	13	6	11	0	30	8	20	6	0	34	8	2	12	0	22	27	59	56	0	142	228
Total	31	9	21	0	61	36	40	12	0	88	26	6	55	0	87	70	152	157	0	379	615
07:00 AM	1	5	4	0	10	9	18	8	0	35	11	7	9	0	27	64	66	91	0	221	293
07:15 AM	5	13	9	0	27	8	11	27	0	46	11	12	5	0	28	78	65	122	0	265	366
07:30 AM	12	20	11	0	43	13	22	33	0	68	13	15	3	0	31	105	60	89	0	254	396
07:45 AM	52	49	46	0	147	11	52	21	0	84	23	18	4	0	45	87	61	75	0	223	499
Total	70	87	70	0	227	41	103	89	0	233	58	52	21	0	131	334	252	377	0	963	1554
08:00 AM	46	53	67	0	166	9	73	43	0	125	36	23	10	0	69	71	33	33	0	137	497
08:15 AM	27	29	15	0	71	8	26	7	0	41	11	6	5	0	22	35	29	46	0	110	244
08:30 AM	10	4	9	0	23	4	7	6	0	17	12	10	1	0	23	9	21	29	0	59	122
08:45 AM	4	7	7	0	18	7	11	7	0	25	13	10	5	0	28	12	12	33	0	57	128
Total	87	93	98	0	278	28	117	63	0	208	72	49	21	0	142	127	95	141	0	363	991
09:00 AM	8	4	2	0	14	6	14	3	0	23	12	2	3	0	17	7	19	16	0	42	96
09:15 AM	2	10	9	0	21	8	12	7	0	27	10	5	6	0	21	4	12	8	0	24	93
09:30 AM	7	4	7	0	18	4	6	16	0	26	11	5	5	0	21	7	13	24	0	44	109
09:45 AM	3	2	9	0	14	2	9	6	0	17	8	5	4	1	18	32	10	15	0	57	106
Total	20	20	27	0	67	20	41	32	0	93	41	17	18	1	77	50	54	63	0	167	404
10:00 AM	4	3	5	0	12	4	8	4	0	16	13	4	3	0	20	10	12	17	0	39	87
10:15 AM	2	4	9	0	15	4	12	0	0	16	12	5	3	0	20	6	8	14	0	28	79
10:30 AM	3	3	10	0	16	12	9	2	0	23	2	6	4	0	12	11	9	16	0	36	87
10:45 AM	6	3	9	0	18	8	11	0	0	19	15	9	10	0	34	5	14	28	0	47	118
Total	15	13	33	0	61	28	40	6	0	74	42	24	20	0	86	32	43	75	0	150	371
11:00 AM	1	6	4	0	11	9	19	4	0	32	17	1	8	0	26	9	12	21	0	42	111
11:15 AM	8	7	10	0	25	6	23	6	0	35	14	4	16	0	34	7	21	15	0	43	137
11:30 AM	8	9	10	0	27	19	21	6	1	47	15	10	7	0	32	12	16	18	0	46	152
11:45 AM	5	11	15	0	31	17	13	5	0	35	16	13	13	0	42	7	18	19	0	44	152
Total	22	33	39	0	94	51	76	21	1	149	62	28	44	0	134	35	67	73	0	175	552
12:00 PM	7	8	6	0	21	24	15	5	0	44	20	4	11	0	35	9	22	16	0	47	147
12:15 PM	2	6	7	0	15	5	20	1	0	26	26	10	22	0	58	7	10	23	0	40	139
12:30 PM	4	6	6	0	16	8	16	3	0	27	22	9	9	0	40	6	16	15	0	37	120
12:45 PM	9	4	13	0	26	4	14	2	0	20	14	13	5	0	32	10	16	27	0	53	131
Total	22	24	32	0	78	41	65	11	0	117	82	36	47	0	165	32	64	81	0	177	537
01:00 PM	8	10	10	0	28	5	12	4	0	21	20	12	6	0	38	6	16	17	0	39	126
01:15 PM	4	3	3	0	10	6	14	0	0	20	19	8	8	0	35	2	16	17	0	35	100
01:30 PM	4	3	7	0	14	9	18	7	0	34	15	7	8	0	30	5	11	10	0	26	104
01:45 PM	4	4	9	0	17	4	25	3	0	32	12	7	8	0	27	12	19	14	0	45	121
Total	20	20	29	0	69	24	69	14	0	107	66	34	30	0	130	25	62	58	0	145	451
02:00 PM	38	30	39	0	107	9	14	4	0	27	22	16	5	0	43	16	18	13	0	47	224
02:15 PM	5	7	9	0	21	10	20	6	0	36	23	5	9	0	37	7	10	10	2	29	123
02:30 PM	3	3	13	0	19	23	8	14	0	45	13	13	3	0	29	17	16	12	0	45	138
02:45 PM	3	4	7	0	14	14	20	10	0	44	20	18	9	0	47	35	14	14	0	63	168
Total	49	44	68	0	161	56	62	34	0	152	78	52	26	0	156	75	58	49	2	184	653
03:00 PM	7	10	7	0	24	15	16	13	0	44	14	15	6	0	35	26	10	19	0	55	158
03:15 PM	8	20	16	0	44	13	26	19	0	58	28	27	7	0	62	24	25	22	0	71	235
03:30 PM	47	62	68	0	177	18	35	12	0	65	18	22	10	0	50	37	33	27	0	97	389
03:45 PM	60	68	56	0	184	14	26	10	0	50	28	14	13	0	55	33	50	35	0	118	407
Total	122	160	147	0	429	60	103	54	0	217	88	78	36	0	202	120	118	103	0	341	1189

Neel-Schaffer
P.O. Box 22625
Jackson, MS 39225

Intersection: Church Rd/Calhoun Stn Pkwy
Counter: T. Kiser (Video)
County/State: Madison/MS
Weather: Cloudy/Dry

File Name : Church-CSP
Site Code : 00000000
Start Date : 10/10/2018
Page No : 2

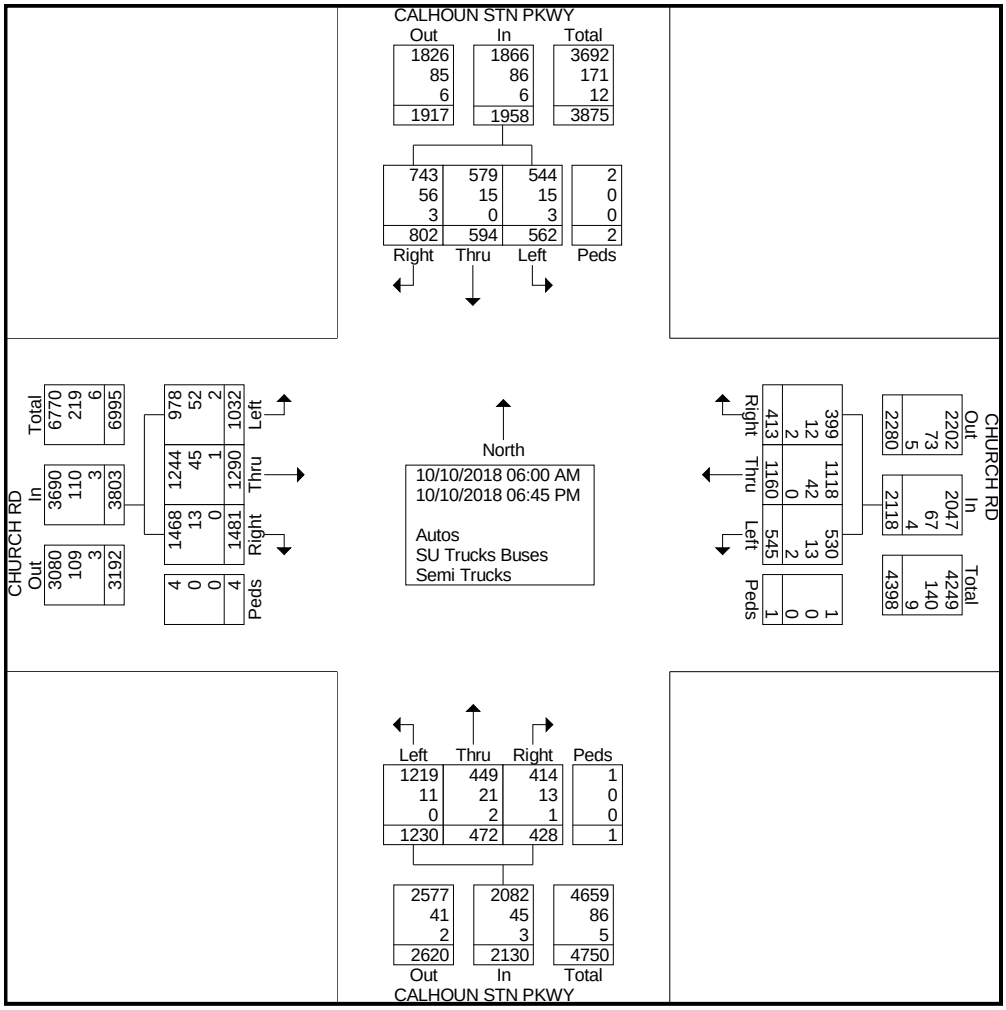
Groups Printed- Autos - SU Trucks Buses - Semi Trucks

	CALHOUN STN PKWY Southbound					CHURCH RD Westbound					CALHOUN STN PKWY Northbound					CHURCH RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	17	13	20	1	51	24	22	6	0	52	35	7	8	0	50	9	20	17	0	46	199
04:15 PM	10	13	20	0	43	14	37	5	0	56	42	12	3	0	57	10	23	23	1	57	213
04:30 PM	11	9	22	0	42	20	40	9	0	69	45	6	6	0	57	13	25	19	0	57	225
04:45 PM	6	7	23	0	36	15	41	6	0	62	55	14	6	0	75	11	27	29	0	67	240
Total	44	42	85	1	172	73	140	26	0	239	177	39	23	0	239	43	95	88	1	227	877
05:00 PM	14	8	27	0	49	15	48	14	0	77	63	16	14	0	93	15	37	31	1	84	303
05:15 PM	14	7	22	0	43	15	42	13	0	70	66	11	11	0	88	19	33	39	0	91	292
05:30 PM	19	16	24	0	59	7	47	2	0	56	80	13	15	0	108	9	30	26	0	65	288
05:45 PM	6	7	18	0	31	18	35	5	0	58	55	3	15	0	73	10	40	35	0	85	247
Total	53	38	91	0	182	55	172	34	0	261	264	43	55	0	362	53	140	131	1	325	1130
06:00 PM	0	0	20	1	21	8	41	7	0	56	64	4	14	0	82	14	19	26	0	59	218
06:15 PM	1	4	20	0	25	10	33	5	0	48	51	5	7	0	63	8	27	24	0	59	195
06:30 PM	5	5	11	0	21	8	31	3	0	42	27	4	8	0	39	9	28	16	0	53	155
06:45 PM	1	2	11	0	14	6	27	2	0	35	32	1	3	0	36	5	16	19	0	40	125
Total	7	11	62	1	81	32	132	17	0	181	174	14	32	0	220	36	90	85	0	211	693
Grand Total	562	594	802	2	1960	545	1160	413	1	2119	1230	472	428	1	2131	1032	1290	1481	4	3807	10017
Apprch %	28.7	30.3	40.9	0.1		25.7	54.7	19.5	0		57.7	22.1	20.1	0		27.1	33.9	38.9	0.1		
Total %	5.6	5.9	8	0	19.6	5.4	11.6	4.1	0	21.2	12.3	4.7	4.3	0	21.3	10.3	12.9	14.8	0	38	
Autos	544	579	743	2	1868	530	1118	399	1	2048	1219	449	414	1	2083	978	1244	1468	4	3694	9693
% Autos	96.8	97.5	92.6	100	95.3	97.2	96.4	96.6	100	96.6	99.1	95.1	96.7	100	97.7	94.8	96.4	99.1	100	97	96.8
SU Trucks Buses	15	15	56	0	86	13	42	12	0	67	11	21	13	0	45	52	45	13	0	110	308
% SU Trucks Buses	2.7	2.5	7	0	4.4	2.4	3.6	2.9	0	3.2	0.9	4.4	3	0	2.1	5	3.5	0.9	0	2.9	3.1
Semi Trucks	3	0	3	0	6	2	0	2	0	4	0	2	1	0	3	2	1	0	0	3	16
% Semi Trucks	0.5	0	0.4	0	0.3	0.4	0	0.5	0	0.2	0	0.4	0.2	0	0.1	0.2	0.1	0	0	0.1	0.2

Neel-Schaffer
P.O. Box 22625
Jackson, MS 39225

Intersection: Church Rd/Calhoun Stn Pkwy
Counter: T. Kiser (Video)
County/State: Madison/MS
Weather: Cloudy/Dry

File Name : Church-CSP
Site Code : 00000000
Start Date : 10/10/2018
Page No : 3



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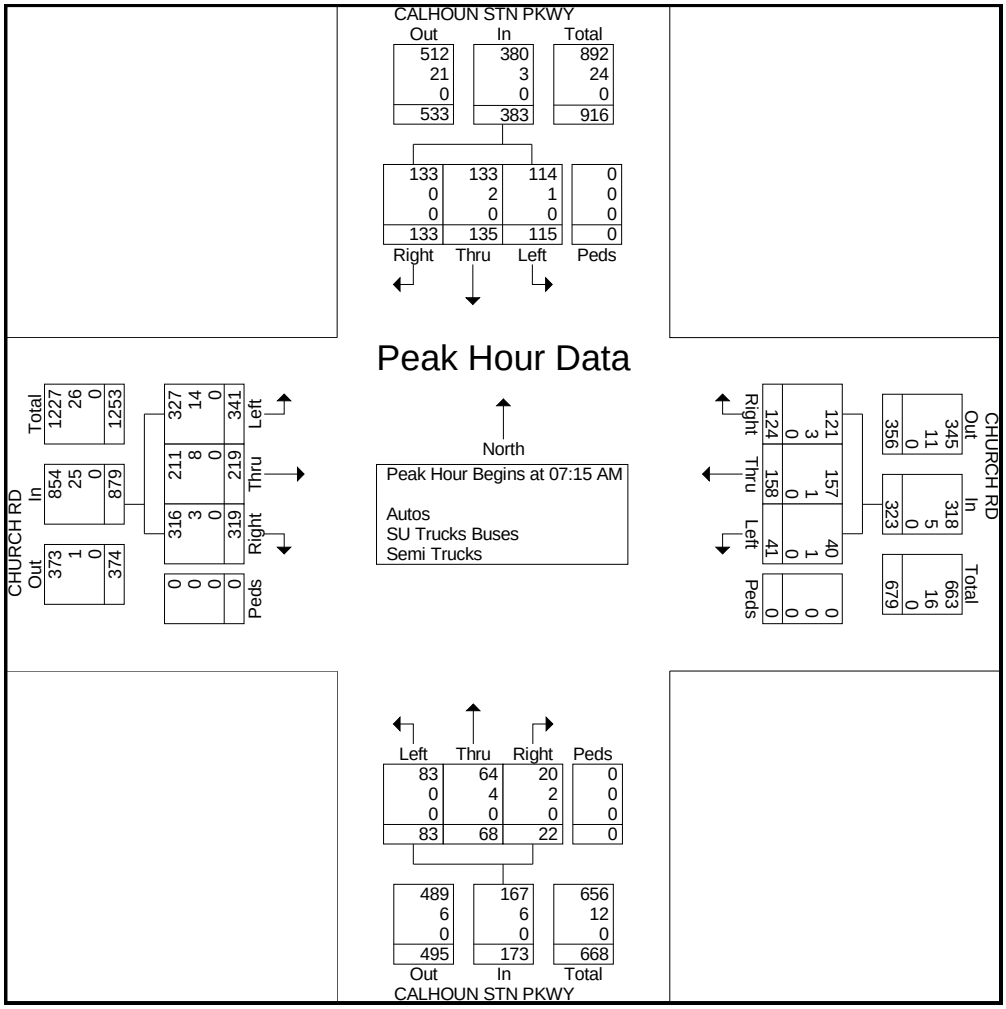
File Name : Church-CSP
Site Code : 00000000
Start Date : 10/10/2018
Page No : 4

	CALHOUN STN PKWY Southbound					CHURCH RD Westbound					CALHOUN STN PKWY Northbound					CHURCH RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	5	13	9	0	27	8	11	27	0	46	11	12	5	0	28	78	65	122	0	265	366
07:30 AM	12	20	11	0	43	13	22	33	0	68	13	15	3	0	31	105	60	89	0	254	396
07:45 AM	52	49	46	0	147	11	52	21	0	84	23	18	4	0	45	87	61	75	0	223	499
08:00 AM	46	53	67	0	166	9	73	43	0	125	36	23	10	0	69	71	33	33	0	137	497
Total Volume	115	135	133	0	383	41	158	124	0	323	83	68	22	0	173	341	219	319	0	879	1758
% App. Total	30	35.2	34.7	0		12.7	48.9	38.4	0		48	39.3	12.7	0		38.8	24.9	36.3	0		
PHF	.553	.637	.496	.000	.577	.788	.541	.721	.000	.646	.576	.739	.550	.000	.627	.812	.842	.654	.000	.829	.881
Autos	114	133	133	0	380	40	157	121	0	318	83	64	20	0	167	327	211	316	0	854	1719
% Autos	99.1	98.5	100	0	99.2	97.6	99.4	97.6	0	98.5	100	94.1	90.9	0	96.5	95.9	96.3	99.1	0	97.2	97.8
SU Trucks Buses																					
% SU Trucks Buses	0.9	1.5	0	0	0.8	2.4	0.6	2.4	0	1.5	0	5.9	9.1	0	3.5	4.1	3.7	0.9	0	2.8	2.2
Semi Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Semi Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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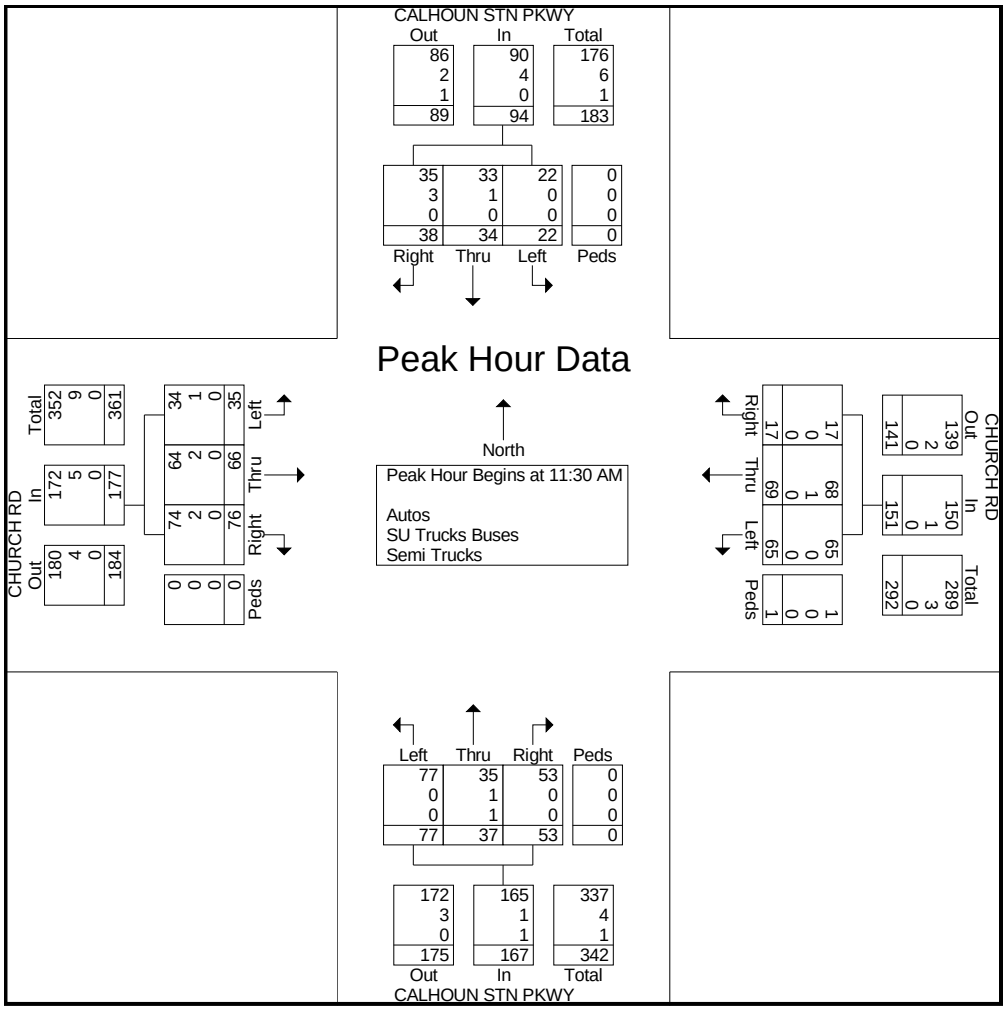
Jackson, MS 39225

Intersection: Church Rd/Calhoun Stn Pkwy
Counter: T. Kiser (Video)
County/State: Madison/MS
Weather: Cloudy/Dry

File Name : Church-CSP
Site Code : 00000000
Start Date : 10/10/2018
Page No : 5

	CALHOUN STN PKWY Southbound					CHURCH RD Westbound					CALHOUN STN PKWY Northbound					CHURCH RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:30 AM																					
11:30 AM	8	9	10	0	27	19	21	6	1	47	15	10	7	0	32	12	16	18	0	46	152
11:45 AM	5	11	15	0	31	17	13	5	0	35	16	13	13	0	42	7	18	19	0	44	152
12:00 PM	7	8	6	0	21	24	15	5	0	44	20	4	11	0	35	9	22	16	0	47	147
12:15 PM	2	6	7	0	15	5	20	1	0	26	26	10	22	0	58	7	10	23	0	40	139
Total Volume	22	34	38	0	94	65	69	17	1	152	77	37	53	0	167	35	66	76	0	177	590
% App. Total	23.4	36.2	40.4	0		42.8	45.4	11.2	0.7		46.1	22.2	31.7	0		19.8	37.3	42.9	0		
PHF	.688	.773	.633	.000	.758	.677	.821	.708	.250	.809	.740	.712	.602	.000	.720	.729	.750	.826	.000	.941	.970
Autos	22	33	35	0	90	65	68	17	1	151	77	35	53	0	165	34	64	74	0	172	578
% Autos	100	97.1	92.1	0	95.7	100	98.6	100	100	99.3	100	94.6	100	0	98.8	97.1	97.0	97.4	0	97.2	98.0
SU Trucks Buses																					
% SU Trucks Buses	0	2.9	7.9	0	4.3	0	1.4	0	0	0.7	0	2.7	0	0	0.6	2.9	3.0	2.6	0	2.8	1.9
Semi Trucks	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Semi Trucks	0	0	0	0	0	0	0	0	0	0	0	2.7	0	0	0.6	0	0	0	0	0	0.2



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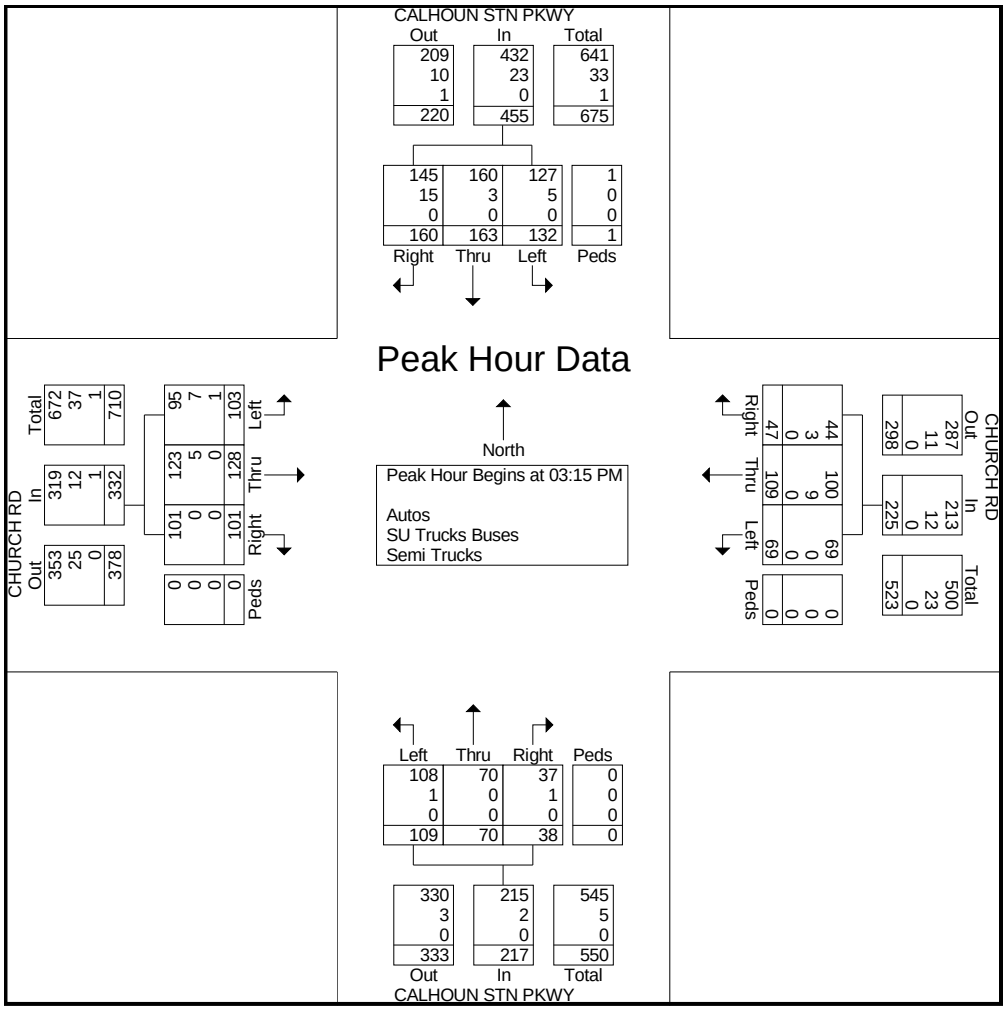
Intersection: Church Rd/Calhoun Stn Pkwy
Counter: T. Kiser (Video)
County/State: Madison/MS
Weather: Cloudy/Dry

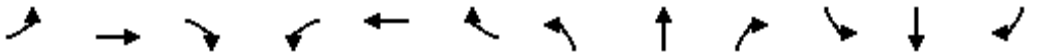
File Name : Church-CSP
Site Code : 00000000
Start Date : 10/10/2018
Page No : 6

	CALHOUN STN PKWY Southbound					CHURCH RD Westbound					CALHOUN STN PKWY Northbound					CHURCH RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:15 PM																					
03:15 PM	8	20	16	0	44	13	26	19	0	58	28	27	7	0	62	24	25	22	0	71	235
03:30 PM	47	62	68	0	177	18	35	12	0	65	18	22	10	0	50	37	33	27	0	97	389
03:45 PM	60	68	56	0	184	14	26	10	0	50	28	14	13	0	55	33	50	35	0	118	407
04:00 PM	17	13	20	1	51	24	22	6	0	52	35	7	8	0	50	9	20	17	0	46	199
Total Volume	132	163	160	1	456	69	109	47	0	225	109	70	38	0	217	103	128	101	0	332	1230
% App. Total	28.9	35.7	35.1	0.2		30.7	48.4	20.9	0		50.2	32.3	17.5	0		31	38.6	30.4	0		
PHF	.550	.599	.588	.250	.620	.719	.779	.618	.000	.865	.779	.648	.731	.000	.875	.696	.640	.721	.000	.703	.756
Autos	127	160	145	1	433	69	100	44	0	213	108	70	37	0	215	95	123	101	0	319	1180
% Autos	96.2	98.2	90.6	100	95.0	100	91.7	93.6	0	94.7	99.1	100	97.4	0	99.1	92.2	96.1	100	0	96.1	95.9
SU Trucks Buses																					
% SU Trucks Buses	3.8	1.8	9.4	0	5.0	0	8.3	6.4	0	5.3	0.9	0	2.6	0	0.9	6.8	3.9	0	0	3.6	4.0
Semi Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
% Semi Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.0	0	0	0	0.3	0.1



HCM 6th Signalized Intersection Summary
3: Calhoun Stn Pkwy & Church Rd

Church-CSP-AM-exist-signal.syn
05/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	341	219	319	41	158	124	83	68	22	115	135	133
Future Volume (veh/h)	341	219	319	41	158	124	83	68	22	115	135	133
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	371	238	0	45	172	0	90	74	0	125	147	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	531	562		402	236		600	1195		650	1229	
Arrive On Green	0.22	0.30	0.00	0.04	0.13	0.00	0.06	0.34	0.00	0.07	0.35	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	371	238	0	45	172	0	90	74	0	125	147	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	12.3	7.2	0.0	1.2	6.3	0.0	2.2	1.0	0.0	3.2	2.0	0.0
Cycle Q Clear(g_c), s	12.3	7.2	0.0	1.2	6.3	0.0	2.2	1.0	0.0	3.2	2.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	531	562		402	236		600	1195		650	1229	
V/C Ratio(X)	0.70	0.42		0.11	0.73		0.15	0.06		0.19	0.12	
Avail Cap(c_a), veh/h	864	1169		471	567		684	1195		742	1229	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.8	19.9	0.0	16.1	29.8	0.0	13.3	15.9	0.0	13.5	15.8	0.0
Incr Delay (d2), s/veh	1.7	0.5	0.0	0.1	4.2	0.0	0.1	0.1	0.0	0.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	3.0	0.0	0.5	3.0	0.0	0.9	0.4	0.0	1.2	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.5	20.4	0.0	16.3	34.0	0.0	13.4	16.0	0.0	13.7	16.0	0.0
LnGrp LOS	C	C		B	C		B	B		B	B	
Approach Vol, veh/h		609	A		217	A		164	A		272	A
Approach Delay, s/veh		21.0			30.3			14.6			14.9	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	28.3	7.4	25.8	8.6	29.0	19.8	13.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	23.5	5.7	44.3	7.5	24.5	28.5	21.5
Max Q Clear Time (g_c+I1), s	5.2	3.0	3.2	9.2	4.2	4.0	14.3	8.3
Green Ext Time (p_c), s	0.1	0.3	0.0	1.5	0.0	0.8	1.0	0.7

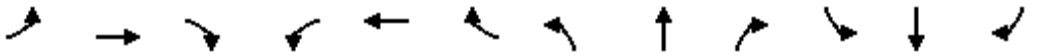
Intersection Summary	
HCM 6th Ctrl Delay	20.5
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
3: Calhoun Stn Pkwy & Church Rd

Church-CSP-PM-exist-signal.syn
05/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	128	101	69	109	47	109	70	38	132	163	160
Future Volume (veh/h)	103	128	101	69	109	47	109	70	38	132	163	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	112	139	0	75	118	0	118	76	0	143	177	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	321	226		297	193		740	1509		811	1525	
Arrive On Green	0.08	0.12	0.00	0.06	0.10	0.00	0.07	0.42	0.00	0.08	0.43	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	112	139	0	75	118	0	118	76	0	143	177	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.1	4.0	0.0	2.1	3.4	0.0	2.0	0.7	0.0	2.5	1.7	0.0
Cycle Q Clear(g_c), s	3.1	4.0	0.0	2.1	3.4	0.0	2.0	0.7	0.0	2.5	1.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	226		297	193		740	1509		811	1525	
V/C Ratio(X)	0.35	0.62		0.25	0.61		0.16	0.05		0.18	0.12	
Avail Cap(c_a), veh/h	1069	1451		367	704		842	1509		936	1525	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.5	23.8	0.0	20.1	24.5	0.0	7.6	9.7	0.0	7.7	9.8	0.0
Incr Delay (d2), s/veh	0.7	2.7	0.0	0.4	3.1	0.0	0.1	0.1	0.0	0.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.8	0.0	0.8	1.6	0.0	0.6	0.3	0.0	0.8	0.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.2	26.6	0.0	20.6	27.6	0.0	7.7	9.7	0.0	7.8	10.0	0.0
LnGrp LOS	C	C		C	C		A	A		A	A	
Approach Vol, veh/h		251	A		193	A		194	A		320	A
Approach Delay, s/veh		24.1			24.9			8.5			9.0	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	28.7	8.0	11.4	8.7	29.0	9.0	10.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	23.5	5.7	44.3	7.5	24.5	28.5	21.5
Max Q Clear Time (g_c+I1), s	4.5	2.7	4.1	6.0	4.0	3.7	5.1	5.4
Green Ext Time (p_c), s	0.1	0.3	0.0	0.8	0.1	1.0	0.3	0.5

Intersection Summary	
HCM 6th Ctrl Delay	16.1
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	1018	32	0	447	0	14
Future Vol, veh/h	1018	32	0	447	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Yield
Storage Length	-	150	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1107	35	0	486	0	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	1107
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	256
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	256
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	19.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	256	-	-
HCM Lane V/C Ratio	0.059	-	-
HCM Control Delay (s)	19.9	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-

HCM 6th Signalized Intersection Summary
3: Calhoun Stn Pkwy & Church Rd

Church-CSP-AM-2021-total.syn
05/04/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	402	261	369	63	183	144	110	83	29	133	172	154
Future Volume (veh/h)	402	261	369	63	183	144	110	83	29	133	172	154
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	437	284	0	68	199	0	120	90	0	145	187	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	567	618		414	259		548	1091		610	1135	
Arrive On Green	0.24	0.33	0.00	0.05	0.14	0.00	0.07	0.31	0.00	0.08	0.32	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	437	284	0	68	199	0	120	90	0	145	187	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	15.5	9.2	0.0	1.9	7.9	0.0	3.4	1.4	0.0	4.2	2.9	0.0
Cycle Q Clear(g_c), s	15.5	9.2	0.0	1.9	7.9	0.0	3.4	1.4	0.0	4.2	2.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	567	618		414	259		548	1091		610	1135	
V/C Ratio(X)	0.77	0.46		0.16	0.77		0.22	0.08		0.24	0.16	
Avail Cap(c_a), veh/h	798	1080		457	524		605	1091		669	1135	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.1	20.3	0.0	15.9	31.9	0.0	15.6	18.9	0.0	15.8	18.8	0.0
Incr Delay (d2), s/veh	3.0	0.5	0.0	0.2	4.7	0.0	0.2	0.1	0.0	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	3.9	0.0	0.7	3.8	0.0	1.3	0.6	0.0	1.6	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.1	20.8	0.0	16.1	36.6	0.0	15.8	19.1	0.0	16.0	19.1	0.0
LnGrp LOS	C	C		B	D		B	B		B	B	
Approach Vol, veh/h		721	A		267	A		210	A		332	A
Approach Delay, s/veh		22.2			31.4			17.2			17.7	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	28.1	8.3	29.9	9.5	29.0	23.1	15.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	23.5	5.7	44.3	7.5	24.5	28.5	21.5
Max Q Clear Time (g_c+I1), s	6.2	3.4	3.9	11.2	5.4	4.9	17.5	9.9
Green Ext Time (p_c), s	0.1	0.4	0.0	1.8	0.1	1.0	1.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	22.1
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	34	15	200	573	32
Future Vol, veh/h	22	34	15	200	573	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	37	16	217	623	35

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	872	623	658	0	-	0
Stage 1	623	-	-	-	-	-
Stage 2	249	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	321	486	930	-	-	-
Stage 1	535	-	-	-	-	-
Stage 2	792	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	316	486	930	-	-	-
Mov Cap-2 Maneuver	420	-	-	-	-	-
Stage 1	526	-	-	-	-	-
Stage 2	792	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.1	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	930	-	458	-	-
HCM Lane V/C Ratio	0.018	-	0.133	-	-
HCM Control Delay (s)	8.9	-	14.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	384	14	0	470	0	24
Future Vol, veh/h	384	14	0	470	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Yield
Storage Length	-	150	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	417	15	0	511	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	417
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	636
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	636
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	636	-	-
HCM Lane V/C Ratio	0.041	-	-
HCM Control Delay (s)	10.9	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

HCM 6th Signalized Intersection Summary
3: Calhoun Stn Pkwy & Church Rd

Church-CSP-PM-2021-Total.syn
05/04/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	160	117	91	126	54	158	85	48	153	200	185
Future Volume (veh/h)	131	160	117	91	126	54	158	85	48	153	200	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	142	174	0	99	137	0	172	92	0	166	217	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	346	267		306	210		698	1453		779	1446	
Arrive On Green	0.10	0.14	0.00	0.07	0.11	0.00	0.08	0.41	0.00	0.08	0.41	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	142	174	0	99	137	0	172	92	0	166	217	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	4.1	5.3	0.0	2.8	4.2	0.0	3.3	0.9	0.0	3.1	2.3	0.0
Cycle Q Clear(g_c), s	4.1	5.3	0.0	2.8	4.2	0.0	3.3	0.9	0.0	3.1	2.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	346	267		306	210		698	1453		779	1446	
V/C Ratio(X)	0.41	0.65		0.32	0.65		0.25	0.06		0.21	0.15	
Avail Cap(c_a), veh/h	1016	1376		355	668		770	1453		884	1446	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.6	24.4	0.0	20.1	25.6	0.0	8.7	10.8	0.0	8.6	11.3	0.0
Incr Delay (d2), s/veh	0.8	2.7	0.0	0.6	3.4	0.0	0.2	0.1	0.0	0.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.4	0.0	1.1	2.0	0.0	1.1	0.3	0.0	1.0	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	27.1	0.0	20.8	29.0	0.0	8.9	10.9	0.0	8.7	11.5	0.0
LnGrp LOS	C	C		C	C		A	B		A	B	
Approach Vol, veh/h		316	A		236	A		264	A		383	A
Approach Delay, s/veh		24.5			25.5			9.6			10.3	
Approach LOS		C			C			A			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	29.1	8.5	13.1	9.6	29.0	10.4	11.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	23.5	5.7	44.3	7.5	24.5	28.5	21.5
Max Q Clear Time (g_c+I1), s	5.1	2.9	4.8	7.3	5.3	4.3	6.1	6.2
Green Ext Time (p_c), s	0.1	0.4	0.0	1.0	0.1	1.3	0.4	0.6

Intersection Summary	
HCM 6th Ctrl Delay	16.9
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	16	35	251	385	22
Future Vol, veh/h	40	16	35	251	385	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	17	38	273	418	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	767	418	442	0	-	0
Stage 1	418	-	-	-	-	-
Stage 2	349	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	370	635	1118	-	-	-
Stage 1	664	-	-	-	-	-
Stage 2	714	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	357	635	1118	-	-	-
Mov Cap-2 Maneuver	463	-	-	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	714	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1118	-	502	-	-
HCM Lane V/C Ratio	0.034	-	0.121	-	-
HCM Control Delay (s)	8.3	-	13.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-